MINUTES
of the
FOURTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE

November 7, 2014
Room 311, State Capitol
Santa Fe

The fourth meeting of the Radioactive and Hazardous Materials Committee (RHMC) was called to order by Senator Peter Wirth, chair, on Friday, November 7, 2014, at 10:03 a.m. in Room 311 of the State Capitol.

Present
Sen. Peter Wirth, Chair
Rep. Eliseo Lee Alcon, Vice Chair
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown
Rep. David M. Gallegos
Sen. Gay G. Kernan
Sen. Richard C. Martinez
Sen. John Pinto
Rep. Jim R. Trujillo

Absent
Sen. Carlos R. Cisneros
Rep. Stephanie Garcia Richard
Sen. Carroll H. Leavell

Advisory Members
Rep. Donald E. Bratton
Sen. Ron Griggs
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. William F. Burt
Rep. Brian F. Egolf, Jr.
Rep. William "Bill" J. Gray
Sen. Stuart Ingle
Sen. Daniel A. Ivey-Soto
Rep. Emily Kane
Sen. Michael Padilla
Sen. William H. Payne
Sen. Clemente Sanchez

Minutes Approval

Because the committee will not meet again this year, the minutes for this meeting have not been officially approved by the committee.

Staff
Gordon Meeks, Legislative Council Service (LCS)
Renée Gregorio, LCS
Carolyn Ice, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and written testimony are in the meeting file.

Friday, November 7

Call to Order

Senator Wirth called the meeting to order and welcomed committee members and members of the audience.

Carlsbad Community Assurance Program

Former State Representative John Heaton, chair of the Carlsbad Nuclear Task Force, reviewed the Waste Isolation Pilot Plant's (WIPP's) accident history and status of oversight and the possible solutions to resolve the effects of the two major incidents that occurred at WIPP this year — the radiological release and truck fire. Mr. Heaton indicated that both incidents were the result of poor maintenance, poor response and poor training. In addition, the radioactive waste was not treated properly due to the failure to follow prescribed treatment procedures and to ensure that proper treatment occurred, as well as failures in the documentation of treatment and outcomes. Also, the federal Mine Safety and Health Administration (MSHA) had not visited WIPP in several years. Mr. Heaton stressed that the truck fire was the most life-threatening incident and that the 86 workers present in the mine were not prepared to handle the accident. The radiological release, he added, was minor. Some of the issues related to oversight that Mr. Heaton spoke about include the complacency in the mine's culture, the extent of deferred maintenance, the lack of accountability and the "siloed" nature of the oversight agencies.

In discussing an oversight solution, Mr. Heaton first spoke of creating a panel to independently oversee WIPP to ensure the safety of both the community and everyone at large. He added that the task force first looked at hiring an independent contractor for oversight but decided that there are already a lot of independent agencies as part of the system. The challenge is in getting all of the agencies together to identify gaps and conflicts. Mr. Heaton also indicated the importance of having observable accountability as well as a public reporting process. The task force determined that quarterly reporting is reasonable.

The oversight mission, Mr. Heaton continued, is to ensure compliance with federal Department of Energy (DOE) orders and to emphasize integrated safety management in relationship to changes needed to the contract. (Mr. Heaton noted that the current contract actually pays a bonus for how much waste the contractor puts in the ground, with little emphasis on safety or maintenance of the facility.) He added that there is a need to keep the WIPP facility at its best through identifying equipment and facility needs, ensuring that waste treatment and characterization is done properly and conducting competency-based training related to safety and crisis intervention.

In identifying "steps to success", Mr. Heaton emphasized the importance of bringing all of the oversight agencies together, clarifying each agency's role, establishing reporting mechanisms and garnering legislative, congressional, gubernatorial and local support. He concluded by emphasizing the importance of WIPP to national defense and to New Mexico's cleanup of waste.

In response to committee members' questions and concerns, the following points were raised and discussed.

- The DOE did not ensure that contractors were performing optimally, and there was no follow-through on corrective action reports; thus, there was a serious oversight problem at the WIPP facility.
- This year, the RHMC has asserted its oversight role, and it will remain important to continue oversight to ensure that the legislative perspective continues to be heard.
- The RHMC could routinely request documented evidence on improvements at WIPP; for example, of the MSHA's 52 indicated surface violations, 49 have been addressed.
- There were serious gaps in communication related to the waste stream that caused the breach; documentation and reporting are all part of the solution to ensure that this does not happen again.
- The MSHA had not visited WIPP in two years.
- The accident investigation reports can be found at www.wipp.energy.gov.
- A clearly defined pyramid structure is necessary so that all agencies can responsibly follow through to one entity that is in charge and ultimately responsible.
- Inspections must be provided, as well as penalties imposed, for noncompliance.
- Outside parties are needed to assess and review procedures; contingency plans must be in place; and corrective actions must be made.
- Information needs to be disseminated to the public to assure the public that oversight is happening.
- The central characterization program at WIPP looks at all documentation on waste preparation and treatment; yet the waste involved in the incidents was shipped based on information received from Los Alamos National Laboratory, but that documentation was incomplete.
- The ultimate responsibility rests with the DOE manager at the WIPP site.
- The underground washing station at the WIPP site was removed by a contractor, and it is possible that another one was on order for replacement, which would have proved instrumental in control of the truck fire.
- Even with an increase in oversight, it is still essential that people do their jobs correctly. It is likely that the safety culture at WIPP changed when emphasis was placed on accelerating shipments.
- Each agency involved in the community assurance program needs to have the authority to present information to the public, reporting on any deficiencies and whether these have been corrected. This would allow elected officials to gauge

responsiveness. The independent agencies need to take the lead, not the DOE, since it is the agency being regulated.

- The New Mexico State University (NMSU) Carlsbad Environmental Monitoring and Research Center's role is to do environmental monitoring for WIPP, and adding the mission of convening all these groups would have to be cleared through NMSU.
- The Department of Environment (NMED) has substantial punitive authority within its permit for WIPP, and it has substantial control over WIPP.
- The WIPP budget, which once stood at $240 million, declined over time, and Joe Franco, manager, Carlsbad Field Office, DOE, worked to bring it back up so the budget is now at $220 million. WIPP recovery costs are estimated to be $500 million. Ventilation is the critical issue and involves the crucial step of sinking a new shaft, which is likely to cost $100 million.
- The accident investigation report describes a significant breakdown in the safety culture at WIPP, including employee dissatisfaction at the bureaucracy under which complaints were not addressed and an erosion of the sense of working toward excellence.
- WIPP is not within the jurisdiction of the state mine inspector.
- It is when processes at WIPP got expedited that problems occurred; and care needs to be taken not to rush to open the WIPP facility until questions are answered and procedures are in place for oversight and for how to handle future problems at WIPP.

Small Modular Reactors

Paul Genoa, senior director for policy development at the Nuclear Energy Institute, gave an update on small-reactor development in the United States. In summarizing the nuclear industry in the U.S., he said that the levels of safety and reliability are consistently high; there is an increased ability to handle extreme nuclear situations; and the U.S. Congress is showing an interest in used fuel legislation.

Mr. Genoa said that there are five reactors under construction in the U.S. — at the Watts Bar Nuclear Power Plant, Vogtle Electric Generating Plant and Virgil C. Summer Nuclear Generating Station, and there are 73 under construction worldwide. He added that the Vogtle site is the largest construction project in Georgia's history, with 5,000 construction workers participating. He then spoke about diversity in the electric system, which is significant because of its impact on household income, and said that the industry is at risk of losing some of this diversity.

Mr. Genoa then talked about nuclear energy as a "clean power plan". He said that nuclear energy represents over 63% of clean energy in the country. He cited California as a state that leads in solar and wind power generation but added that during its last full year of operation, the San Onofre Nuclear Generating Station produced about 18,097 gigawatt hours (GWhs), while the total combined output of wind and solar generation in 2013 was 16,985 GWhs. Because all nuclear power plants were built in a short period of time, all of their licenses will expire soon,

Mr. Genoa said. He added that nuclear energy provides a strong tax base and high-paying jobs and that much of the country is recognizing the value of nuclear energy.

In discussing the role of small modular reactors in providing options for nuclear energy, Mr. Genoa clarified that these reactors are not all that small; they are generally the size of a local shopping mall, about 20 to 30 acres. These would provide power for 100,000 people and are built in a modular fashion, which means additional components can be added at a later time. Also, these reactors are largely built with American components in American factories and then shipped around the world, he added. Mr. Genoa said that this technology advances U.S. policy in several important ways: by providing increased energy and national security (reactors run all the time); by expanding fuel and technological diversity; and by advancing a clean energy future. He said that U.S. growth is predicted to be relatively flat, as the demand is relatively flat, but that in the rest of the world, the demand is growing rapidly. Mr. Genoa said that the Nuclear Energy Institute cares about the leadership needed to provide clean energy technology to the world, and it wants to transfer a technology and safety culture along with that technology. He stated that this market could amount to a $500 billion to $750 billion clean energy market over the next 10 years.

Mr. Genoa discussed several small-reactor applications, including light-water reactors; mini, distributed and fuel-cycle applications; and high-temperature gas reactors. He said there is a high level of interest across the U.S., that Alaska has repealed its moratorium on nuclear energy and that the State of Washington, South Carolina and Missouri all want to host fabrication facilities for small reactors. Light-water reactors will be the first to market, he added, since they are the closest to what is on the market today. The hope is that these designs will be deployed in the mid-2020s. Among the challenges Mr. Genoa cited are that the licensing alone will cost $1 billion over 10 years, with another half billion dollars needed for engineering before being ready to enter the commercial market. He stated that the Nuclear Energy Institute is looking for domestic and international partners and that the federal government is supportive.

Mr. Genoa indicated that the DOE, under its former secretary of energy, Dr. Steven Chu, is supportive of small modular reactor development, and the DOE convened an advisory committee to look at small reactors in this country. He added that the safety and security culture around the world can be improved, and the U.S. can expand its leadership to nations that do not yet use nuclear power. He stated that under the Obama Administration, the DOE and the U.S. Congress approved a small nuclear reactor technology program, which is a cost-share program that was funded at $452 million over six years. The first company to receive a cost-share award was Generation mPower, LLC, he added. The program is receiving continued national support and increased funding. The current DOE secretary, Ernest Moniz, is a big champion of these reactors, Mr. Genoa said, because of the innovation required alongside their "strong safety considerations". Also, at the end of last year, a second award was made to NuScale Power in Oregon, and both Westinghouse Electric Corporation and Holtec International are developing small modular reactors.

Licensing continues to be a major challenge, Mr. Genoa said, and involves addressing generic regulatory issues and preparing consensus positions for the industry, as well as ensuring that there are regular interactions with regulators. He spoke of the Nuclear Energy Institute's industry white papers, which have been submitted to the federal Nuclear Regulatory Commission (NRC). The NRC has indicated that it is working on design-specific review standards and is ready to begin reviewing small modular reactor applications. In describing time frames, Mr. Genoa said that once a license application is submitted, it takes 39 months to be granted approval for design certification; and building and operating takes another three years. He indicated that the Nuclear Energy Institute needs to engage in testing of infrastructure for design validation. Mr. Genoa concluded that to sustain licensing investment and development, a predictable regulatory framework is a necessity.

In response to committee members' questions and concerns, the following points were raised and discussed.

- Changing a fuel design would involve at least 18 years within the regulatory process, so as much as the radioactive element thorium might be a valid fuel to investigate, it would take an enormous amount of time to do so.
- Nuclear facilities close down when their licensing ends; there is a new U.S. Environmental Protection Agency (EPA) rule that is designed to encourage new nuclear facilities, but that rule expires in 2030.
- The nuclear industry is putting together a foundational organization to assist in building plants, but federal support and state partnerships are necessary.

Inovus Solar; Renewable Energy Opportunities

Bruce Eastman, chief operating officer of Inovus Solar, said that he is also a board member and investor in the company and finds the renewable energy market fascinating. Inovus Solar provides both on- and off-the-grid solar lighting installations, he said, with most installations done in the U.S. He said that Inovus Solar installed lighting around the world to demonstrate that its products would stand up to difficult situations. The company also added its solar capabilities to existing lighting for cases where infrastructure was already in the ground, he said.

Mr. Eastman then talked about the energy situation in California, where utility rates are increasing 8% per year after the state passed legislation to shut down coal-fired plants, which decreased the energy supply by 62%. The new energy capacity came at a much higher cost per megawatt hour, with higher fuel costs and price volatility, he explained. Inovus Solar, Mr. Eastman added, installs solar panels or LED lights on existing light poles to take advantage of existing infrastructure. In addition, key components of a solar panel system decrease in price over time, he said. Also, the solar panels can be oriented directionally to increase power generation, which is not possible when solar panels are installed on roofs. A key partner to Inovus Solar is Idaho Power Company, and Mr. Eastman noted that even in Idaho's weather of winter inversions, the solar panel system exceeded its annual energy generation forecast in less

than 11 months. Also, the system can be remotely controlled and monitored, and the solar panel system generated more electricity than the LED lights consumed, he stated.

Mr. Eastman indicated that Inovus Solar can provide solar energy that is less expensive, easy to deploy and robust. He said that Inovus Solar takes advantage of the existing topology of lights; creates circuits comprising 30 light poles; and aggregates multiple circuits. He also said that community solar projects provide an opportunity for residents of apartments to participate in renewable energy, and many of these projects qualify for federal American Recovery and Reinvestment Act of 2009 funding. Mr. Eastman said that Inovus Solar advises customers to develop a pilot project to clarify the specific needs; work with the existing utility; identify permits and fees; and analyze locations. He stated that a public comment period should also be included in this phase.

In identifying whether these systems can be instituted under existing law in New Mexico, Mr. Eastman spoke of how different states handle different aspects of energy production. Senator Wirth asked for input from the utility companies in attendance at the meeting, which included Xcel Energy and Public Service Company of New Mexico (PNM). Both representatives expressed interest in the concept of using existing infrastructure and adding to it for energy gain, and both representatives found the concept of community solar to be interesting. Some concerns were expressed at the possibility of having to give up some lighting load in the evening and subsidizing costs through other ratepayers.

In response to committee members' questions and concerns, the following points were raised and discussed.

- As long as the solar source is generating energy, energy is put back into the grid; two separate instruments measure what the solar source generates during the day and what is then consumed.
- The main concern with the community solar power concept as it has been addressed thus far is the retail wheeling aspect. With a remote system that needs power to be distributed, this has to happen within PNM's distribution system, and the community solar entity that is generating power has not paid for that system.
- Community solar power can benefit a broad base; however, utilities need to be able to make money. The alternative to this model is for a city to create its own municipal utility, as Boulder, Colorado, has done.

Mercury Waste Stream Management

Steve Pullen, compliance manager at the Hazardous Waste Bureau at the NMED, said that his purview for regulation generally involves businesses, not households, and it is the vapor within mercury bulbs that causes mercury bulbs to be regulated at all. Highlights of his detailed presentation include the following (see handout for the complete details).

- Mercury bulbs are of two types, fluorescent tubes and compact fluorescent light bulbs (CFLs), and these bulbs have replaced incandescent bulbs because of their tenfold greater energy efficiency.
- Fluorescent lamps contain differing amounts of mercury, depending on lamp size and age; a four-foot fluorescent tube from 2006, for example, contains about 12 milligrams of mercury, whereas newer lamps contain less.
- A broken mercury bulb's mercury content is released into the atmosphere, where it becomes an invisible, toxic vapor. Mercury is a toxin that affects the nervous system.
- Approximately 50% of atmospheric mercury emissions comes from coal-fired power plants, and less than 1% of total mercury emissions comes from bulbs.
- Households are not subject to the hazardous waste regulations, but businesses and industrial facilities are regulated by the Hazardous Waste Bureau, which conducts oversight of the disposal and recycling of mercury bulbs at solid waste facilities.
- In 2006, the legislature passed House Memorial 5, which required the NMED and the Department of Health to develop a mercury reduction plan, including conducting a study, educating the public and supporting the Solid Waste Bureau of the NMED in funding disposal and recycling of mercury bulbs.
- Estimates from the national Association of Lighting and Mercury Recyclers indicate that 30% of regulated bulbs, and 2% of nonregulated bulbs, are recycled nationally.
- The New Mexico Recycling Coalition promotes a policy of producer responsibility by advocating that recycling costs are included in the sales costs of mercury bulbs.
- Most components of CFLs and fluorescent bulbs can be recycled.
- The NMED has devised best management practices for businesses and for homeowners in disposal of mercury bulbs.
- The NMED strongly urges businesses and individuals to use "green" lamps, which have reduced or eliminated the use of mercury.
- In September 2014, the EPA released a strategy to address mercury-containing products.

In the ensuing discussion, some concern was expressed regarding the difficulty in regulating the purchase and use of mercury bulbs and the relative ease of regulating their manufacture and sale, at least for businesses. The technology is, in a sense, regulating itself by the introduction of "green" bulbs and the transition to LED products, both of which are potentially less harmful, a committee member remarked. Also, most members of households do not understand the harmful effects of mercury bulbs and their proper disposal.

Committee Business

A motion was made and seconded to approve the corrected second version of the minutes for the September 16-17 RHMC meeting, and the minutes were unanimously approved.

Representative Anderson then moved to send a letter from the RHMC to the New Mexico secretary of environment and the Carlsbad Field Office manager of the DOE. After further

discussion, a substitute motion was made by Representative Brown and seconded by Representative Anderson that a letter be sent that includes the following points:

- that there is value in the establishment of a community assurance program regarding WIPP;
- that the RHMC encourages that such a community assurance program has provisions to make periodic reports to the committee, given that the RHMC is the legislative oversight committee on nuclear activities in New Mexico; and
- that the existence of a community assurance program would be consistent with the consent-based model recommended by the President's Blue Ribbon Commission on America's Nuclear Future.

The motion was unanimously approved.

Public Comment

Norbert T. Rempe discussed the history of WIPP and cited an article that appeared in the *Albuquerque Journal* on November 7, 1971, which he described as the initial catalyst for WIPP. He said that former New Mexico Senator Joseph E. Gant, Jr., read that article, which described the State of Kansas and the Atomic Energy Commission (AEC) being embattled over the AEC wanting to use an abandoned salt mine for the disposal of nuclear waste from facilities across the U.S. Kansas' governor and congressional representatives opposed the AEC plan, and the article reported that the AEC was looking for alternative sites. The article motivated Senator Gant to follow up, given that New Mexico has salt mines in Carlsbad.

Mr. Rempe then presented a chart from a DOE publication that shows dosage ranges for ionizing radiation for cancer radiotherapy, acute radiation syndromes, cancer epidemiology, the DOE's low-dose program and medical diagnostics. The chart also includes DOE regulations and guidelines for dose limits. Mr. Rempe suggested that the RHMC ask the DOE some questions about this chart, such as: 1) where on this chart is the past or current contamination as a result of WIPP incidents?; and 2) where would it fall on the DOE's chart if all of the filters were removed and the WIPP facility returned to regular ventilation? Mr. Rempe's believes that this action would have no consequences.

Mr. Rempe spoke of carrying his own Geiger counter to measure background radiation and that his measurements indicate that there is more radiation present in Santa Fe than in Carlsbad. He advocated looking at actual risks and hazards over bureaucratic rules and guidelines.

Scott Kovak of Nuclear Watch New Mexico emphasized his opposition to any lessening of safety standards at WIPP. He indicated that the estimates for WIPP recovery is closer to $1 billion, an astronomical cost to taxpayers. He added that there were seven permit modification requests in the works at the time of radiological event, all of which would further erode the safety culture at the facility. He stated that more transparency is needed from the WIPP contractor.

Mr. Kovak indicated that New Mexico has some leverage with the opening of WIPP that is currently not being used. Given that WIPP is the gem of the DOE repositories, New Mexico has a lot of leverage in saying when WIPP should reopen, he opined. Mr. Kovak urged more oversight, public participation and quarterly meetings at WIPP that would include information on any updates at the facility, as well as permit modification requests. He concluded by stating that nuclear energy is only clean if the mining and waste aspects of the process are ignored.

Adjournment

There being no further business, the RHMC adjourned at 3:33 p.m.